Applicant: Kiochiro TANAKA Attorney's Dock-No.: 12732-034001 / US4891

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REMARKS

Claims 1-30 are pending in this application with claims 1-6 being independent. Claims 1-6 and 13-24 have been amended.

Figures 1, 2A-2D, 4A-4C, and 27A-27C have been amended to add "Prior Art" in response to the Examiner's objection.

The abstract has been amended to be less than 150 words. No new matter has been added.

Claims 13-24 have been amended in response to the Examiner's objections and in accordance with the Examiner's suggestion.

Each of the independent claims recites forming a second crystalline region after fully forming a first crystalline region, and doing so using a laser beam having a wavelength between 370 and 650 nm. As described in the specification and illustrated in Fig. 3, a laser beam having a wavelength of 370-650 nm is more likely to be absorbed by an amorphous silicon film than a polycrystal silicon film. As a result, the properties of a portion of a first crystalline region that is later irradiated by the laser beam during formation of a second crystalline region remain almost unchanged relative to the properties of other portions of the first crystalline region. This is an advantageous result when overlapping crystalline regions need to be formed.

Claims 1-12 and 25-30 have been rejected as being anticipated by Andra. Applicant requests reconsideration and withdrawal of this rejection because Andra does not describe or suggest forming a second crystalline region after fully forming a first crystalline region, as recited in each of the independent claims. Rather, Andra describes forming a single crystalline region in a single continuous process using overlapping passes of a laser beam. In particular, Andra is concerned with forming a crystalline seed layer for use in preparing silicon thin film solar cells (see Andra at p. 639). While Andra describes crystalling a large area by scanning line by line with 30% overlap, Andra in no way considers the crystallization formed by each line to be a separate region, with crystallization of a second region being initiated after a first region is fully formed. Rather, the successive lines are each used to crystallize different parts of a first region in a continuous process of forming the first region.

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Claims 1-6 and 13-18 have been rejected as being obvious over Yamazaki '080 in view of Andra. Applicant requests reconsideration and withdrawal of this rejection because neither Yamazaki '080, Andra, nor any combination of the two describes or suggests using a laser beam to form a second crystalline region after using the laser beam to fully form a first crystalline region.

Yamazaki '080 is directed to using laser beams having different properties to form a semiconductor layer having an upper portion with a higher crystallinity than a lower portion. Accordingly, Yamazaki '080 does not describe or suggest using the same laser beam source to form two different crystalline regions. As such, and in view of the failure of Andra discussed above, no combination of Yamazaki and Andra can be said to describe or suggest using the same laser beam source to form two different, overlapping crystalline regions.

Moreover, applicant further requests reconsideration and withdrawal of this rejection because one of skill in the art would have had no motivation to combine Yamazaki '080 and Andra in the manner set forth in the Action. Indeed, to employ Andra's laser in the system of Yamazaki '080 in the manner set forth in the Action would be contrary to the stated purpose of forming a semiconductor layer with upper and lower portions having different crystallinity.

Claims 19-24 have been rejected as being obvious over Yamazaki '080 in view of Andra and Yamazaki '730. Applicant requests reconsideration and withdrawal of this rejection because Yamazaki '730 does not remedy the failure of Yamazaki '080 and Andra to describe or suggest the subject matter of the independent claims.